WHITE (Jas. C.)

With Dr White's compliments.

CASES OF PITYRIASIS RUBRA PILARIS (BESNIER.) ERYTHÈME INDURÉ DES SCROFULEUX. LYMPHANGIOMA CIRCUMSCRIPTUM. MULTIPLE BENIGN CYSTIC EPITHELIOMA. ANGIOMA SERPIGINOSUM (CROCKER).

BY

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Pityriasis Rubra Pilaris (Besnier).

IT is not my intention to reopen before this Association the much-vexed question of the relations of this disease to the lichen ruber of Hebra, which has been the subject of such confusion in the discussions at recent national and international congresses of dermatologists, but to report an interesting case of an affection which is certainly rare in this country. I will merely state in the beginning that I have seen and believe in the existence of that inflammatory dermatosis, lichen ruber, originally described by Professor Hebra, and my opinion that it is in no way related to the keratosis I am about to briefly describe. I desire also to record here my protest against the liberty taken by certain eminent foreign dermatologists in their unrestricted statement that "lichen ruber des Américains" is synonymous with this affection. Some of our writers may hold this opinion, or have confounded the two diseases, but that is a matter of individuals.

The patient was a young lady, twenty-seven years old, who had always had a healthy skin prior to last October. At that time she noticed that her palms and soles were becoming red and scaly. A month later her scalp became "full of dandruff,"

[1] Read before the American Dermatological Association at Washington, D. C., May, 1894.

and her face also turned red and "branny;" she then first noticed the appearance of the papular lesions here and there. Since then there had been a gradual development of the cutaneous changes up to the time when I first saw her, January 10, 1894. Her general health had remained unaffected.

Her face was at this date of a uniform, dull red color, looked glazed, and was slightly scaly and thickened. The whole scalp was covered with a thick layer of scales with very little apparent admixture of fat. The skin beneath them was not perceptibly reddened. The skin of the neck and upper chest, some four or five inches downward, was also uniformly red, slightly infiltrated, and considerably more rough and scaly than the face, possibly because less often washed than the latter. The palms and soles were greatly thickened, of a dull red tint, and the lines of phalangeal flexure were universally marked by deep and painful fissures. The extensor surfaces of the fingers were in a similar condition. The fingers were held in a semi-flexed position, and all movements of the hands and feet caused distress. Walking was very painful. The flexures of the elbows and knees were also converted into red and thickened areas covered with thin scales. These were the only portions of the integument which presented features of uniform, diffused inflammation, viz., hyperæmia, infiltration and desquamation.

Over all other affected parts of the body an entirely different condition existed. The mouth of nearly every follicle was occupied by discreet, firm, horny, hemispherical or conical papules, varying in size from the head of a small pin to that of a large upholsterer's tack. The whole surface of the trunk, front and back was densely studded with them. They covered the entire extent of the legs in innumerable numbers. Upon the arms they occupied chiefly the flexor surfaces. Their color was slightly redder than the general tint of the skin, especially so upon the trunk, and upon some portions of this part of the body they were slightly scaly. The condition of the skin upon which they were seated, the interfollicular areas that is, was apparently normal. There was no marked hyperæmia, pigmentation, œdema, cell infiltration, or desquamation, although it was almost hidden from inspection where the papules were densest and largest. The smallest type of the lesions closely resembled those seen in ordinary cases of keratosis pilaris of the upper arm, but for the most part the trunk and limbs looked like no other dermatosis familiar to us. Considering their condition in connection with the wholly different

appearances presented by the head and neck, hands and feet, we have a *symptomen-complex* which stamps the affection as one of unique and striking individuality. The nails had not undergone any marked change. The only subjective symptoms were a slight, occasional pruritus, and pain on motion of the hands and feet.

I would not be understood to state that a recognition of this disease is always an easy matter. Indeed, some of its phases, according to the locality affected, very closely simulate other affections, and judged by themselves, or before the more characteristic lesions have developed, might readily be mistaken for the former. Thus the scalp closely simulated the appearances of a simple seborrhœa, as it so often does in psoriasis as well. The face might have been regarded as a type of a mild eczema erythematosum, or pityriasis rubra (Hebra). The palms and soles presented the same appearances as in chronic eczema, or inveterate diffused psoriasis. A portion of the upper chest, where the papules were confluent and the redness most pronounced, looked not unlike an area of true lichen ruber acuminatus. The most characteristic lesions themselves, the discrete horny papules of variable size, and of different shades of red, gray and yellow, suggested the kindred disorder of keratinization, the common lichen pilaris and the mildest grades of keratosis follicularis (mine), or ichthyosis hystrix, if the latter two be not indeed identical.

I have met with one other characteristic instance of this disease, and two cases in children of one family not sufficiently advanced to make the diagnosis positive. These have all occurred in the past four years, since I had the advantage of familiarizing myself with its multiform aspects in the incomparable collection of the models made by Baretta to illustrate them in the St. Louis Museum at Paris. It may well be that it is of less rare occurrence in America than the statistics of this association indicate, and that others, as well as myself, may have mistaken cases of less striking individuality than this I now report for some of the affections above named it so strongly resembles.

I will make no reference to the pathology of the disease, which has been so thoroughly studied by Besnier and Boeck.

I would, however, offer a criticism upon the name now attached to it. Its most characteristic lesion, that on which the diagnosis must chiefly rest, the horny papule, is not included in this pseudo-comprehensive descriptive title, and the condi-

tion generally implied by the term pityriasis exists only in the mildest degree, except upon the more restricted localities affected.

It is one more member of the group of keratoses, which demands our careful study.

ERYTHEME INDURÉ DES SCROFULEUX.

My attention has been especially held during recent years by some cases of rare occurrence with strongly marked features in common, and which I have not been able to assign to a definite position in our list of recognized diseases. No doubt I had seen them at an earlier period, and had regarded them as anomalous forms of the affections they most closely resemble.

The first case which made itself prominently conspicuous by its individuality was a boy twelve years old, whom I exhibited to my class as a peculiar instance of erythema nodosum. The lesions were deeper seated, of larger size, and were more generally distributed upon the lower legs than usual. They continued to develop, too, over a period of many weeks, and many of them broke down and terminated in deep, indolent ulcers, which were remarkably refractory under treatment. The duration of the whole process I cannot give, as the patient ceased attendance upon the clinic before complete recovery.

The second case was a girl of eighteen, or thereabouts. She came to the out-patient department with a few deeply embedded nodules, the size of a filbert, upon the lower legs, perhaps half a dozen on each. They were all situated upon the lateral or posterior surfaces. A part of them resembled the deeper lesions of erythema nodosum, while others were more like gummata. During her attendance of two or three months similar processes appeared upon the lower extremities, and a few of smaller dimensions upon the arms below the elbows. Most of the former underwent a slow softening, and terminated in deep sluggish ulcers. The movements of her limbs were very painful, and her general condition was poor, so that she was taken into a hospital. While under my care she received a thorough course of antisyphilitic treatment, and the cutaneous lesions such local care as I bestow upon those of similar character in that disease, but without apparent impression upon them. In the wards the affection was regarded as a syphiloderm, and treated accordingly, but with as little response. I am unable to state the subsequent history.

The third case was a girl nineteen years old, and the dis-

ease was confined to one leg. There were at the first visit four or five deep-seated, reddish purple nodules scattered over the posterior surface, which subsequently broke down at considerable intervals, and became exceedingly painful ulcers.

The fourth case was a young married woman, aged twenty-two. She reported that she had a similar attack, although far less severe, five years previously. I first saw her in November, 1893. She then had some half dozen nodules on the lower half of the lower legs, some of which were of two or three months' duration. The youngest of them were of a dusky purple color, while those of longest duration were of a dull brown tint. The largest extended deeply into and below the skin. During the succeediug four months many new lesions developed and underwent various forms of metamorphosis. Some of them softened and sloughed, and were converted into shallow or deep ulcers. Some of them slowly disappeared, leaving superficial depressions without other change in the surface of the overlying skin except in color. The smallest of them disappeared and left only the discoloration. The ulcers were extremely slow to heal, and terminated in depressed and discolored cicatrices. Six months after the beginning of the disease the affected areas were thickly occupied by such lesions, some twenty on each leg, varying in size from a pea to a half dollar, and in color from a livid red to a dark and dirty brown. Two of them only were seated immediately over the tibiæ, none of them were below the ankle. There was one, a small one of short duration, upon the forearm. In their early stages they were exceedingly painful to touch and on motion. One or two of them might have been mistaken by the brightness of their coloring, at first, for the ordinary manifestations of erythema nodosum. The patient was otherwise the picture of health and all her functions were in a norma condition.

Such is a brief account of the course of these cases, all of which had certain marked characteristics in common. The cutaneous lesions, while resembling those of erythema nodosum more strongly than those of any other dermatosis, differed from the same in many important respects. They were generally more deeply seated, as if their starting-point were in the subcutaneous tissues. They were more uniform in size, like marbles or bullets beneath the skin, and rarely presented themselves as small as peas, or like the flattened indurations so often associated with the larger nodules of erythema nodosum. They were more discreet and sparse, too, and were rarely

grouped, as those of the latter often are. Instead of affecting principally the anterior surface of the lower legs, the shins, they were scattered mostly up and down the posterior and lateral regions of the same. In color they were markedly different. In the beginning the overlying skin was often of normal hue, and the nodules were to be discovered only by pressure, or by their slight projection, and only after one or more weeks did it assume a dull red, purplish or brownish color. They never presented the brilliant hyperæmic tints which sometimes characterize the early stage of the lesions of erythema nodosum, nor the later rapid changes of hue suggesting the descriptive title—erythema contusiforme. The course was very different, too, far more sluggish and prolonged. The nodules were sometimes weeks in developing, and months might pass before involution was completed. This might ensue by gradual absorption, but in a large proportion of lesions the overlying integument would slowly soften and break down, and leave indolent deep ulcers. The destruction of tissue was by necrosis rather than by active suppuration. Occasionally the tissues immediately surrounding the nodules, or later the ulcers, would become inflamed, but not often to any wide extent. In all stages the lesions were tender on pressure, but never so excessively so as those of erythema nodosum. When many ulcers existed the limb might become very painful on motion, or when in a dependent position. Eventually the seats of some of the lesions which did not undergo ulceration were marked by atrophic depression, not very different in appearance from the sunken cicatrices left by the ulcers. Both forms were generally surrounded by narrow areas of a dirty brown color of undetermined duration. The general condition of the patients in two of the cases was excellent in the beginning and until strength was somewhat reduced by the long continuance of pain and impeded ability of motion in the open air. In the others the process might have been interpreted from the start as indicative of the impaired vitality which preceded. These patients were anæmic and feeble, although they were free from any serious functional or organic disease. In none of the cases were there any positive indications of the existence of tuberculosis or syphilis. There was a notable absence of all the acute febrile symptoms and of the lymphangitis, which often accompany severe attacks of erythema nodosum.

Now, what is the nature of this affection which has been

observed by dermatologists in France, Germany and England in a sufficient number of instances to warrant its recognition as an independent disease?

Bazin was the first to recognize its individuality, and called it erythème induré des scrofuleux. An excellent description of it, with cases, by T. Colcott Fox was published in the August and October numbers of the *British Journal of Dermatology*, under Bazin's title. It has been, no doubt, generally con founded with erythema nodosum or syphilis by observers, so that we have no record of its real frequency. Its lesions resemble, too, the so-called scrofulous gummata. But have we any evidence which authorizes us to regard it as a manifestation of tuberculosis? I am not aware of the existence of any. Certainly I should not accept any as conclusive which did not rest upon the demonstration of the presence of the tubercle bacillus in the affected tissues, or possibly upon its uniform association with other forms of tuberculosis in the same individual. No satisfactory examination of the histology or bacteriology of the lesions has been made to my knowledge, and we must await the results of such investigations before we may hope to learn anything definite as to its pathology.

Lymphangioma Circumscriptum.

In the Autumn of 1892 I saw at my clinic at the Massachusetts General Hospital a man who presented the following appearances:

The left lateral thorax, from the axilla downward to the last rib, and from the nipple backward to the anterior edge of the scapula, was closely occupied by

1st. Groups of prominent vesicles, varying in size from the head of a large pin to a small pea, with very thick and firm epidermal coverings. The contents were colorless or of a dirty yellowish tint, and of rather thick consistence. On the borders of this space the vesicles formed small and sparse groups, but in the central portion they were densely crowded. By rupture they were converted into oozing areas of considerable extent.

2nd. Large elevated crusts, thick and of very firm consistence, of a yellow or reddish color, formed apparently by the coagulation of the contents of the vesicles. They looked not unlike the crusts of an eczema madidans, but were much tougher and of prolonged duration. Some of them were two or three inches in diameter.

3d. Crimson elevations of pea size, resembling angiomatous

new growths of cock's-comb character. They were of firm consistence, and became slightly paler on prolonged pressure. They were sparsely interspersed among the groups of vesicles.

4th. Verrucous nodular masses of considerable size and height, some of them capped by dense horny concretions.

The whole inner surface of the upper arm down to the elbow, and connected with the above described thoracic district by a continuous belt through the axilla, presented similar closely crowded lesions, but the crusts were more pronounced and the horny concretions more abundant. The appearances closely resembled those in Morris's plate in the first number of the *International Atlas of Rare Skin Diseases.*

At his first visit the whole integument upon which these lesions were seated was in a state of diffused dermatitis of intense grade and of an erysipelatous type, which extended for a considerable distance upon the chest roundabout.

The patient was thirty-four years old, and he stated that he had had a similar condition of the skin of the same parts when he was ten or twelve years old, and that he recovered under my care, but I find no record of the case at that time. The disease then began, his mother said, upon the arm, where a "congenital lump" existed, possibly a deeply seated nævus. The present condition had been present two or three years, according to his account, and during this period there had been several attacks of the acute dermatitis of brief duration, during which all the various lesions had become greatly aggravated and multiplied. During them, also, there were symptoms of constitutional disturbance, with sensitiveness of the skin and pain on motion of the arm, such as usually accompany superficial erysipelas. At other times, generally that is, the local subjective symptoms were a slight tenderness of the surface over the oozing areas, and a varying degree of pruritus. The general condition of the patient was excellent.

Under my usual method of treatment of erysipelas, the constant application of a lotion of carbolic acid, alcohol and water, the dermatitis quickly disappeared. Soothing and protective dressings were directed to be constantly worn. Under them the vesicles no longer underwent rupture, oozing ceased, and he was able to do his work, that of a motorman upon an electrical street car. In February, 1893, the number of the peculiar vesicles had greatly diminished, the angiomatous (?) elevations were less conspicuous, and the most noticeable lesions were the large, persistent crusts, and the horny verrucous masses.

The patient was not seen again for a whole year, until February, 1894. The appearances had undergone very little change. There had been no recurrence of the dermatitis, and very few new vesicles had developed, he stated. There were few fresh ones visible, situated chiefly at the edges of the thoracic area, and these looked partly dried up. They were of indefinite but long duration. The most conspicuous features were the thick and firm crusts which still covered considerable portions of the affected areas, which had remained for more than a year unchanged, and the closely compacted horny concretions projecting for a quarter-inch or more above the general surface. On removing these by force they were seen to be seated upon prominent spongy bases, which bled freely.

You are all familiar with the recent abundant literature concerning the various forms of disease of the cutaneous lymphatics. Cases have been recorded now by observers in England, France and Germany, and in this country by Elliot, and Epstein. In addition to those of pure varix or cysts of the lymph capillaries we find others intimately connected with similar modifications of the blood-vessels, hæmato-lymphangiomata. Other associated forms of tissue change have also been noted, as angio-keratoma, pachydermia and fibroma. An admirable account of all these varieties will be found in Török's latest article. [1]

The anatomy of my case was studied by Dr. Bowen, who kindly presents the following report:

"A lesion of medium size was removed from the arm and hardened in alcohol. It should be said that the lesion selected was one that did not exhibit telangiectasic points upon its surface, nor was there any infiltration of the base, or warty change. It was selected in default of more varied material, as representing the earlier stage of the process. The chief feature found with the microscope was a collection of chambers, or cysts, lying in the upper portion of the corium and approaching very near to the epidermis, without, however, ever complicating it. These chambers, or cysts, were filled with a very finely granular material, together with an occasional leucocyte, and some masses of fibrine. In many of the sections the contents of the cavities had escaped during the preparation or manipulation. The cavities were often divided into several subdivisions by septa formed of the unaltered

[1] Monatsheft für Prakt. Dermatologie, Band XIV., No. 5.

corium. A well-marked layer of cells could be traced, forming an endothelial lining of the cavities. Some of these cells were rounded and full; others were of a spindle shape, or slightly flattened. There could be no doubt that these cavities were newly formed or dilated lymph-vessels and spaces, and this was proved conclusively by the fact that they could be seen to communicate with smaller, more regular channels below, which were evidently a part of the lymphatic system. There were considerable collections of round cells about these dilated or hypertrophied lymphatic vessels and spaces, but none in other parts of the corium. In the lesion examined but few enlarged blood-vessels could be seen. Those that existed were usually situated in the corium below or at the side of the lesion, none above it. The epidermis was thinned over the lesion, the lower rete cells being flattened and compressed. The papillæ had disappeared in great measure. At the borders of the lesion, however, the interpapillary epithelial prolongations were considerably lengthened.

"The histological structure, therefore, accords perfectly with that of the cases of circumscribed lymphangioma that have been described. It is not possible to form an intelligent opinion from the study of a single lesion as to whether there exists here a simple dilatation of pre-existing lymph channels, or whether there is a new growth, as is claimed by most recent writers. My impression is favorable to the latter view."

The secondary lesions in my case, the verrucous elevations of great prominence, with their horny coverings, which form so conspicuous a feature in advanced stages of the disease were such as are found upon the lower extremities so commonly in elephantiasis. Very likely the recurrent dermatitis conduced to such hypertrophy of the superficial layer of the cutis. It is notable, however, that in spite of such attacks of erysipelas-like inflammation there was no pachydermia or true elephantiasis of the cutaneous tissues in general, as has been observed in other instances.

MULTIPLE BENIGN CYSTIC EPITHELIOMA.

I desire to report a case of this rare and much betitled affection, because one of the features it presents is unique and belies one of its descriptive names. The patient is a woman, forty-five years old, who was born in Stuttgart, and came to Boston thirty years ago. She was married at the age of twenty-two, and has had eleven children, of whom only three

survive. The oldest of these is sixteen. They have healthy skins, and her relatives, so far as she knows, have been free from any form of cutaneous or carcinomatous disease. The first change in the condition of her skin noticed was at the age of twenty-four, when a few firm "pimples" of the same color as the skin appeared, scattered over the face. These never disappeared, but grew slowly larger, and others of the same character continued to develop up to three years ago. Some of them, she says, began to soften ten years ago, and of these several were removed by caustic plasters from time to time, leaving flat scars to mark their former seat. Within the last two years her general health has failed, so that she has been largely confined to her house. The menstrual function is still active.

Status præsens.—The patient is pale, but well nourished. The face presents some fifty lesions, which may be classified as follows: (Fig. 1.)

1. Flat papules or tubercles, varying in size from the head of a large pin to a split pea. They are of the color of the skin, and of about the same consistence. The smallest are only slightly elevated, and would scarcely be noticed except on close inspection.

2. Larger lesions, varying from pea-size to that of a dime, one of them as large as a quarter dollar, circular or ovoid in shape, but still not much more elevated than the smaller ones. They are all redder, however, than the latter, and the largest very much so; their surface is still smooth and level.

3. Others of medium size and upward, which are either somewhat depressed in the center or have begun to soften and be covered with dull brown crusts of no great thickness.

None of these first three groups have a central opening.

4. Two or three lesions much more prominent, and presenting abrupt perpendicular edges and depressed centers, closely resembling Hutchinson's crateriform epitheliomata. These measure from one-half to three-fourths of an inch in their longest diameters.

5. The right upper eyelid is occupied by an irregular elongated ulcer, partly covered by a crust, with deeply infiltrated margins, so that the lid can be only partially elevated. The inner third of both lids of the left eye and the side of the nose adjacent are the seat of open ulceration, by which all the cutaneous tissues have been destroyed. The inner outlines of this area are marked by an elevated narrow margin of great hardness. The whole presents the characteristic appearance of

the "rodent ulcer" type, and is the seat of frequent hæmorrhage. This eye is closed.

6. Scattered and smooth scars of irregular outline, where former lesions have been destroyed by caustics.

There are a few of the larger lesions also upon the neck, shoulders and forearms, but none of these have undergone any secondary transformation.

All of them are free from subjective manifestations, excepting the open ulcers about the eyes, which are very painful. The flow of tears over the open wound is very distressing, and there is often intense headache, described as penetrating from this locality inward.

You are familiar with the large number of names which have been given to this affection by the observers of individual cases, and which represent their respective views regarding its anatomy. It may be instructive to reproduce them here:

Hydradénomes éruptifs, Darier.
Cystadénomes epitheliaux bénins, Besnier.
Epithéliome kystique bénin, Jacquet.
Cellulome epithélial éruptif kistique, Quinquaud.
Gutartige epithéliom, Phillippson.
Syringo-cystadenom, Török.
Lymphangioma tuberosum multiplex (?), Kaposi.
Epithelioma adenoides cysticum, Brooke.
Multiple benign cystic epithelioma, Fordyce.

These titles clearly indicate the nature of the anatomical changes which characterize the disease, and the diverse interpretations which have been placed upon them by different observers. No one of them has studied it more carefully than our valued colleague, Dr. Fordyce, whose admirable communication upon the subject to this Association, at the meeting of 1892, you must well remember. I have the pleasure of exhibiting to you some micro-photographs of sections from his cases made subsequently to that date. An examination of the structure of the growths in my own case has been made by our fellow member, Dr. Bowen, with his usual care, the results of which I will now present.

"Four lesions of different sizes were removed from the face and hardened in alcohol. Two of these, the smallest and one of the larger lesions, were stained *in toto* in alum, cochineal and rosin, imbedded in paraffine, and serial sections through the entire nodule obtained. Sections from the smaller lesion, which was not much larger than the head of a pin, showed,

Fig. 1.

Multiple Benign Cystic Epithelioma.

under the microscope, a compact area of epithelial cells lying in the upper portion of the corium without any distinct arrangement. This mass of epithelial cells was irregularly rounded in its outline, and the individual cells were seen to be of a similar appearance to those of the lower rete layers. On examining the sections mounted in series, those at the edges of the little tumor showed simply this nest of epithelial cells lying in the corium, and separated by a small belt of normal tissue from the epidermis. In many sections, however, especially in those near the center of the nodule, there was a distinct connection between the lower rete cells and this epithelial area in the corium. (Fig. 2.) The epidermis, apart from this connection with the misplaced epithelial focus, was essentially normal. There was no connection between the epithelial area and the sebaceous, or sweat glands, which were, so far as could be seen, normal. One lacuna, round in shape, was present in this lesion in the midst of the epithelial area. Its walls were made up of a thin layer of flattened cells, so that it had the appearance of a cyst from which the contents had escaped. In one or two of these sections a small amount of corneous material was seen in the interior. The epithelial cells in the affected area were well stained, and no other appearances than occasional karyokinetic figures seem worthy of comment.

"In the other three lesions examined, which were all somewhat larger than that just described, a rather different picture was found. Epithelial masses in the corium were here also the essential feature, but a distinct arrangement in islands and elongated tracts was noted, the latter often suggesting, when seen with a low power, the course of a sweat-gland. With a higher power, however, these tracts were seen to be made up of compact masses of epithelial cells, and to be connected and intermingled with one another in a very complicated way. In the midst of these epithelial bands and islands small cysts were frequently seen, containing a granular or homogeneous substance, together with one or two large, deeply stained cells. In one of the lesions these small cysts were quite numerous, and in places the outline of epithelial cells could be traced which had lost their power of staining, and were evidently being converted into the homogeneous or colloid substance which occupied the interior of many of the cysts. In a few of the cysts, it should be added, a corneous substance was present in place of, or together with, the colloid change. In all of the tumors *a connection of the epithelial masses and tracts with*

the lower cells of the rete could be demonstrated in some of the sections. There was no proliferation of the glandular structures found."

First described and individualized in 1887 by Jacquet and Darier in France, the affection has been recognized to exist sparsely in all countries where there are dermatologists of sufficient experience to distinguish it from other dermatoses which it most closely resembles, and with which no doubt it had prior to the above date been confounded. But it can scarcely be claimed that we are yet completely acquainted with its clinical features. Considerable variation has been noticed in the course, seat and macroscopical appearances of the small number of cases which have fallen under observation; but this case differs widely in some particulars from any of those previously recorded. The lesions vary more in size, many of them far exceeding the dimensions previously noted. Thus Brooke says they never exceed the size of a pea. Fordyce mentions one in the mother's case as large as two peas as exceptional; other writers speak of groups of confluent lesions. In my case several of the lesions were half an inch in diameter, and one of them was an inch across. There were lacking in them the appearances described as embedded milia, and the black points or dots beneath the skin recorded in some of the other cases. Nor did any of the lesions have a noticeably translucent look, or exhibit in a marked degree the telangiectases mentioned by others. Their seat was principally the face, as in Brooke's and Fordyce's cases, but the neck, upper trunk and arms were also sparingly affected. There were none upon the scalp.

The most remarkable feature in my case, however, was the transformation in the oldest and largest lesions. Three or four of these had, in recent years, taken on the appearance of ordinary epithelioma in several of its advanced clinical phases, viz., scaling, crusting, and open, deep ulcerative destruction of the whole skin. If any one of the latter were alone under observation no other diagnosis than ordinary epithelioma would be entertained, whereas the great bulk of the lesions were just like those hitherto recorded as characteristic of the affection, the identity with which is fully established by the investigation of Dr. Bowen above given. How, then, shall we account for this highly important deviation in course and prognosis from any of the other cases, which seems to belie, as I have expressed it, the accuracy of the paradoxical claim that here is a disease characterized by tissue changes universally regarded hitherto

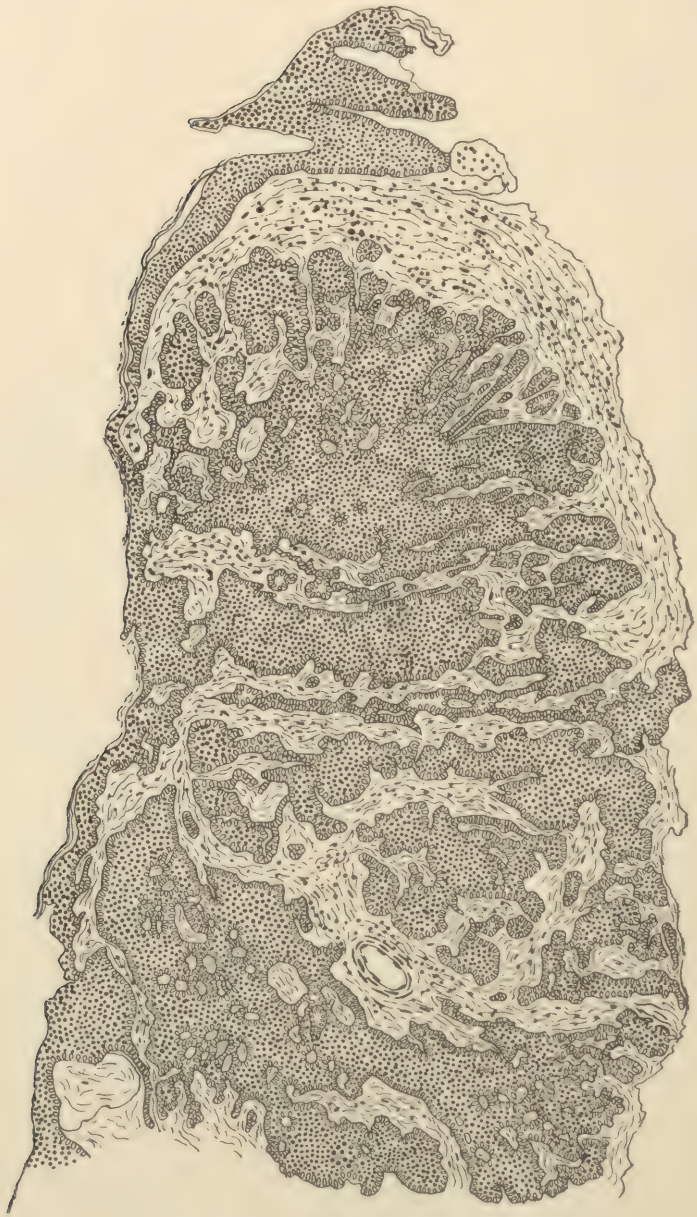

FIG. 2.

SECTION OF MULTIPLE BENIGN CYSTIC EPITHELIOMA.

as malignant, and yet possessing indefinitely a benign character? Is it that some of the lesions in this case have undergone, by chance, as it were, a secondary malignant transformation, as the long-standing lesions of keratosis, verruca, tuberculosis and other benign dermatoses are known to do occasionally, or is it rather that this is to be the eventual fate of more or less of the lesions in every case, and that future reports will show, when sufficient time has elapsed in the history of all of them, that epitheliomatous tissue is bound in time to go to the bad? I am inclined to this latter view. Ten years ago, when this patient was thirty-five years old, every lesion would have appeared as "benign," as all those described in all other recorded cases, as the great majority in fact of those in my own case. The natural tendency of such modified epithelial tissue out of place to self-destruction will probably assert itself when it has encroached upon the normal cutaneous structures in such large accumulated masses as in this case, or when after middle life the vitality of the elements of both is impaired. The only record of a similar transformation is in the report of a case of "Hydradenom," by Hallopeau, in which one of the tumors on the eyelid became "epitheliomatous." It is to be hoped that the reporters of all recorded cases will hold them under prolonged observation, and publish their future history. In the meantime, the correctness of the appellation benign must be regarded as problematical.

Angioma Serpiginosum.

The patient was a boy, 12 years old, of delicate appearance and highly nervous temperament. His mother furnishes the following history: At birth a "purplish red mark" was noticed below the right shoulder blade, semi-lunar in shape, with its curved edge directed upward. Its longest diameter was half an inch. It increased very slowly in size in an upward direction until he was four years old, when another spot no larger than the head of a pin appeared near the original one, which gradually became larger, and since then the others have continued to appear and grow up to the present time.

The affected area forms a belt about three inches in width, extending from the anterior edge of the right scapula six inches forward to the nipple, its upper margin being on a level with that point. (Fig. 1.) This region is occupied by some twenty-four individual lesions, varying in size from a pin's head to circular patches two or more inches in diameter. The process begins in

the form of minute elevated points, of a bright red color, which slowly increase in size until they are an eighth to a sixth of an inch in diameter. At this stage they are elevated from an eighth to a twelfth of an inch above the general surface, are of a bright red color, varying from scarlet to carmine, which can be made only partially to disappear by long pressure, and are of a firm consistence. Having attained this size they undergo involution at the centre, which slowly sinks down as the growth spreads peripherally. In this way rings are formed, and the disease progresses as an annular elevated margin, about one-eighth of an inch in breadth, slowly creeping outward, until by confluence with other lesions the regular circular shape is lost. This margin has the same characteristics as the original uniform patch, in color, elevation and consistence. Within the ring the skin has apparently returned to its natural condition excepting in color, which remains of a dull purplish or dusky hue. New foci, in the shape of minute points, appear at some little distance from the older areas, and assume in time the same annular mode of progression with central involution. Only a very few minute points are to be observed springing up anew in the old central depressed areas.

In October, 1892, an attempt was made by Dr. H. W. Newhall of Lynn to destroy the anterior group of lesions, some seven or eight in number, by the Paquelin cautery. The operation was apparently successful for a time, for pale cicatricial tissue took the place of the former rings and smaller circular patches, which has remained without change, but the growth has gradually crept beyond these scars at every point at their borders, and assumed its original condition.

We find, therefore, the following striking appearances upon the regions thus treated: numerous small, circular, smooth, white scars, slightly depressed, surrounded by a narrow, elevated ring, of a bright red color, and one large patch of irregularly oval form, two inches in its longest diameter, its central portion of a dull purplish color, the old untreated area of involution. Around this a belt, a quarter inch in width, of pale scar tissue, and outside of this a narrow, elevated, carmine rim of new development.

All the affected portions of the skin are sensitive on slight pressure, so that the patient shrinks from the touch of the observer, but he is of an excessively "nervous" temperament. The parts also itch frequently. There is not urgescence of the tissue.

There is no record of any angiomatous conditions in earlier generations.

Now what is the nature of this remarkable affection? Apparently an angioma, which, beginning as a minute papule, like the well-known "cayenne-pepper dots," slowly increases to the size of a pea, and then undergoes spontaneous involution in its central portion, while it spreads outward in annular form to an indefinite extent and for an indefinite period, so that after ten years circinate areas one or two inches in diame-

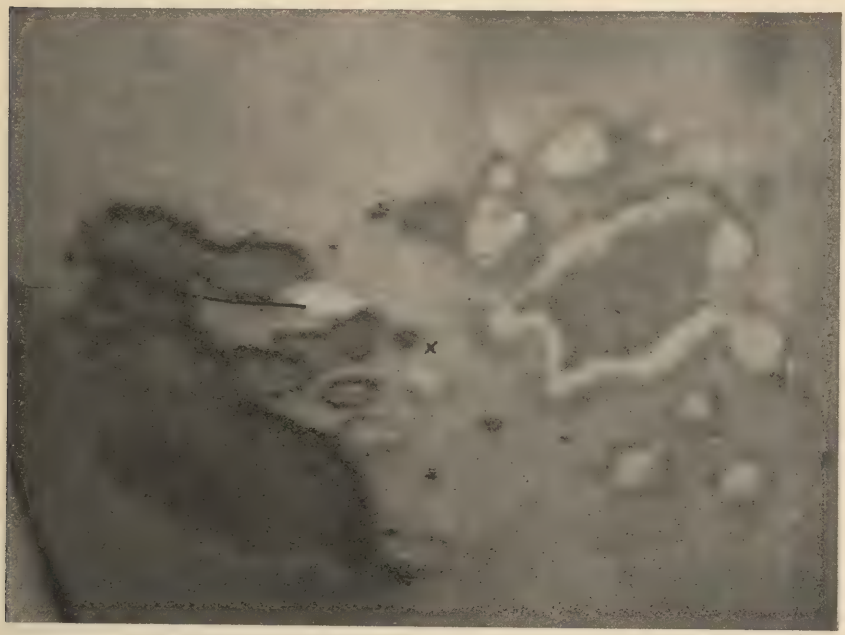

FIG. 1.

"ANGIOMA SERPIGINOSUM." BLACK LINE POINTS TO FIRST EXCISION. X INDICATES THE PORTION EXAMINED.

ter are formed. The elevated margin, or ring, preserves a uniform breadth about its whole circumference, as though the process had a self-limited period of activity or existence, just as the life history of the vegetable growth, or the fertility of the epidermal soil in tinea circinata determines the breadth and duration of the ring as it progresses outward. New foci are continually developing some distance, one-eighth to one-third of an inch, beyond these older areas, which in turn are converted by central involution into the annular forms. The tissue

in all stages of activity, the small papules and the rings in all their parts, present the same character—a firm, smooth, elevated structure, varying from a bright red to a claret color. The central areas after involution sink down to the normal level, but remain stained of a dull purplish-brown tint.

Mr. Hutchinson was the first to call attention to the remarkable peculiarities of this affection in his Archives of Surgery in 1891, and gave it the title—infective angioma or nævus lupus. He has published also a brief account of three other cases, one observed by Lassar and called by him lupus erythematosus, one by Tay, and another by Jamieson in Great Britain. The four cases differ from one another in some respects, but the characteristic features, the progression in annular form and the development of the "satellites," as Hutchinson calls them, outside of the rings, were present in all of them. He seems to regard the process as in some way allied to his lupus lymphaticus, which is lymphangioma, but this view may be considered problematical. The seat of the disease in these cases was respectively: the upper extremity, the arm and lateral thorax, the face and upper extremity, and the lower extremities. Three of them began before the age of two. In one of them only was there positive evidence of the existence of a previous nævus. In none of them, it should be noticed, has any form of ulceration or malignant transformation been observed at last record. Crocker gives a description of the disease in his last edition, founded upon the above cases, under the title angioma serpiginosum, which seems to me to be a more appropriate one than that of Mr. Hutchinson.

That an angiomatous, or nævus-like growth should invade new portions of the cutaneous tissues in this manner, progressing in a serpiginous or annular form, while undergoing uniform involution in the areas first infected, and at the same time to be developing new foci beyond its original seat, has seemed to me a process so novel and inexplicable that only the most careful study of its histology could reveal the nature of its mysterious pathology. At my request, therefore, Dr. Newhall very kindly removed one of the smaller lesions, which was just assuming the annular form. One portion of this was sent to Dr. Darier, the distinguished chef du laboratoire de la Faculté a l'Hôpital Saint Louis, Paris; the other was given to Prof. W. T. Councilman of the Medical School of Harvard University, both of whom have made a most careful study of the specimen.

Dr. Bowen had also examined a specimen removed some months previously.

Dr. Darier's report follows:

(Translation) The piece of skin which I have examined was sent to me in alcohol. In its preparation I have completed the hardening by the action of alcohol and gum. The sections made perpendicular to the surface have been submitted to various coloring reagents, and mounted partly in glycerine and partly in Dammar resin.

Examination by a low power shows, toward the middle of the sections, a lesion occupying the whole extent of the derma, and consisting of a mass of cells deeply colored by the reagents. These masses are more or less sharply defined at their borders, and present very diverse outlines, circular or ovoid, with festooned or angular margins, or drawn out into trails, which, in the sufficiently thick sections, seem to form, by ramification or anastomosis, a coarse network. In places where the section shows much of these cell-trails it can be seen that they occupy about a quarter or a third of it.

It is desirable to specify the relations which these masses of cells bear to the normal elements of the skin.

The epidermis is composed of its ordinary layers unaltered, and is not infiltrated by the numerous migratory cells, as occurs in inflammations.

The papillæ appear to be a little elongated and enlarged in the middle portion of the specimen, but the cell masses have nowhere penetrated into their interior.

These masses are, on the other hand, numerous in the subpapillary layer, where they form in places a nearly continuous layer. In the corium proper one sees sometimes ovoid masses, sometimes streaks running parallel to the fibres, or ascending to ramify themselves on reaching the more superficial layers. Finally, in the deeper layer of the corium, upon the border of the hypoderm, where the sweat-glands lie, the masses of cells are abundant and large and are often seen in immediate contact with the glomerulus. Sometimes they penetrate it and the cells separate the loops of the glandular ball, but in spite of such intimate relations the tubes of the gland are always easily recognized, and are never invaded or destroyed. An elongated mass of the cells may often be seen accompanying the sweat canal for some distance. The other glandular structures of the skin and the muscles are healthy. The arterial and venous vessels of the hypoderm

are normal. Those of the corium are all included and, as it were, drowned in the elongated masses of cells, and are to be recognized with difficulty or altered, as I will describe below.

In fact, the elongated streaks of cells are arranged along the course of the vessels, following them in their distribution, and stretching themselves out in sheets about the glomeruli and especially on a level with the sub-papillary plexus.

The cutaneous tissues between the cell masses are scarcely or at all altered. In the papillæ the cells are, perhaps, a little more numerous than natural. There is no modification in the fibres and cells of the corium. The border of a mass may be seen at some points to connect with a capillary network surrounded by some cells. The sections colored by orcein, according to the method of Tänzer-Unna, with the nuclei colored by methylin-blue, show the elastic network perfectly preserved, and not even interrupted or broken by the elongated cell masses, which only insinuate themselves between its meshes.

It remains to carefully study the new-found cell masses to determine their nature. With high powers applied to sections colored by hæmatoxylin, methylin-blue, picro-carmine, or alum-carmine, it may be seen that the elements of which they are composed are cells, having, for the most part, a fusiform, aplastic, or angular shape. Their protoplasm is abundant, and the nucleus is generally oval in form. They present the characteristics of young connective-tissue cells, and bear the strongest resemblance to such cells of the neighboring interfasicular spaces.

This is manifestly no question of epithelial cells, but of cells having a mesodermic origin. Nor are they any more migratory cells or leucocytes, although there are in their midst sometimes an uncertain number of elements of the latter kind, recognizable by their smaller size and diminutive nucleus, and by being more deeply colored and often bosselated, but they are in great minority. This fact furnishes conclusive evidence that we have not to do with a subacute inflammatory lesion of perivascular seat, as one might think on superficial examination. The persistence of the elastic tissue, which disappears, as a rule, in contact with inflammatory foci, and the absence of migratory cells in the intermediary tissues and epidermis, are additional arguments in the same direction. (I have seen upon the borders of young tumors of the mycosis fungoide of Alibert and Bazin young elements of an analogous appearance

and distribution, but in such a case the elements are nearly all round cells identical with leucocytes.)

Moreover, a careful examination of a fine section permits certain details to be recognized, which are of great importance. In all the masses the flattened cells have an evident tendency to group themselves concentrically about a certain number of centres. Such a centre is very often made up of two or three cells of the same nature attached at their edges and forming thus a canal. Sometimes the opening of the canal is very small and empty, sometimes it contains one or more leucocytes, or even granules, which appear to be the débris of blood globules (altered by alcohol). At two or three points I have seen the centre occupied by a cell much larger than the others with several nuclei (a vasoformative cell ?).

It appears, then, that we are dealing with a new formation of capillaries at the expense of the elements of the neoplastic tissue. These capillaries are sometimes perfect, sometimes abortive, and on the other hand sometimes dilated to a considerable degree. One finds, in fact, vascular cavities circumscribed by a single row of flat cells, and presenting the dimensions of an enormous arteriole. By the side of capillaries cut transversely there were others where the section had been made obliquely or longitudinally. The dilated vascular cavities are generally empty, but in some of them more or less altered red globules were observed. A certain number of these dilated capillaries are to be observed in the sub-papillary layer of the corium.

How, then, is this lesion to be classed, and what name shall be given it ?

A neoformation, non-inflammatory, composed of cells of the type of young connective-tissue cells, ought necessarily to bear the name of *sarcoma*. But it will be observed that we are in the presence of an unusual form of sarcoma, not massed in a single tumor, but reticulated and infiltrated as a network, which appears to follow the normal distribution of the vessels of the skin. There is, moreover, to be noticed the tendency which the cells of this sarcoma have to form networks and clusters of more or less dilated capillaries, that is to say, to transform themselves into a true *angioma*. The epithet, angioplastic or vasoformative, would express this peculiarity.

I will conclude by proposing for this new formation the title: *sarcome angioplastique réticulé.*

I have never seen hitherto a case which completely resem-

bles this one clinically and anatomically, but I have seen and studied many ordinary angioplastic sarcomas. I should remark, moreover, that it is very common to find in certain nævi, those designated as *verrues charnues* (verruca mollis), cell products very analogous to those of this case. One may find, for instance, in the corium, elongated masses of cells, having the appearance of sarcomatous or endothelial cells, which have at times in their centre an empty space so well marked that it is a question of a new-formed capillary. Some parts may be distinctly sarcomatous—at other times the cells of the neoplasm are pigmented.

The benign congenital sarcomas (for which one has proposed the name of endotheliomas improperly, seeing that endothelial cells are of the same nature as ordinary connective-tissue cells) may, under some unknown influence, give rise to invading sarcomatous tumors, and even to a generalization of simple, melanotic, or telangiectasic sarcoma.

The information which I have received, that this tumor started upon the surface of a nævus, leads me to think that it is a case of this sort, that is, a *nævus à structure de sarcome angioplastique devenu envahissant.*

Here follows the report of the examination made conjointly by Prof. Councilman and Dr. Bowen:

"Two portions of tissue taken at different times from lesions presenting the same characteristics were investigated, one of these somewhat larger than the other. Both were hardened in absolute alcohol, stained in various media, cut in serial sections and examined. The various methods of staining did not bring out any especial differences in the histological details. The stainings which gave the best results were a combination of hæmatoxylon and eosine, and safranine. For the investigation for bacteria sections were stained in Weigert's fibrine stain, with and without a counterstain in carmine. The epidermis and the epithelial appendages of the epidermis, such as hair follicles and sweat-glands, present no alteration. (Fig. 2.)

The inter-cellular tissue of the papillary layer and of the corium generally is unaltered. The special pathological condition consists in groups of cells distributed in the corium. In general these cell groups are fairly well circumscribed. They vary in size, and their general arrangement is parallel to the surface of the skin, although there are numerous exceptions to this. The groups are rarely round, but have a longitudinal

shape, frequently extending in long masses, which sometimes appear to be formed from amalgamations of neighboring groups. Along with the perfectly definite cell groups there are other places which show a more or less circumscribed increase of cells, which have generally the same longitudinal arrangement as the definite groups. Few of these extend up into the papillary layer. In general the number of cells in the papillary layer is not increased, although here and there rows

FIG. 2.

"ANGIOMA SERPIGINOSUM." SHOWING CELL GROUPS IN THE CORIUM. a a DILATED LYMPHATICS IN CELL GROUPS X 60.

of cells are seen. In this layer the rows of cells generally have a direction perpendicular to the surface. Examined with a high power the cell groups show a considerable degree of difference. This concerns not only the number but the character of the cells in different groups and in different parts of the same group. The nuclei have a general direction parallel to the course of the mass. They stain brightly with all of the staining reagents used. They are large, oval in form, and have something

of the appearance of the nuclei of epithelioid cells. They are surrounded by a small amount of protoplasm, and the individual cell boundaries cannot always be distinctly made out. In all of the groups of cells, without exception, an arrangement into smaller groups or clumps is apparent. This is more definite at the periphery of the nodule than in the interior, although even in the interior it is appreciable. In the periphery there are frequently closely packed groups of cells, often showing a formation around a lumen, with rows of cells around this concentric to the inner group. (Fig. 3.) Between these masses of cells there are long fusiform nuclei, also showing the group arrangement and possibly to be referred to longitudinal section of the cell groups. In some parts of the group the cells cease abruptly, in others they extend various distances into the surrounding tissue. In the vicinity of the nodules and frequently at a distance from them, various changes in the vessels can be made out. The changes consist in swelling and proliferation of the endothelial cells of the vessel, frequently combined with proliferation of the cells on the outside, so that two rows of cells can be distinctly recognized. These vascular changes apparently affect small veins and capillaries. No lesions were found in any of the arteries which could be recognized as such by the presence of a muscular coat. Most of the cells are of the same general character. Here and there a few smaller cells corresponding to the small round cells of granulation tissue are evident and there are a few poly-nuclear leucocytes. There is no evidence whatever of anything corresponding to inflammation. The vessels of the cell groups are anæmic rather than turgid, and there is no general leucocytic infiltration. A marked peculiarity of the process consists in the presence of small granular masses here and there in the cell groups. Some of these, corresponding to the course of the section, are round, others longitudinal. In the hæmatoxylin and eosine stain they are colored more brightly with eosine than the rest of the section. They are not sharply circumscribed, they are granular and show no definite structure. In some of them portions apparently more solid than the remainder are seen. In sections which cut these structures longitudinally they are long, irregular, and frequently have pointed ends. Here and there in the centres of the cell clumps a number of cells can be seen more granular and not staining so brightly as the surrounding cells, and every gradation between this and total necrosis of the cells can be made out. These

structures are rather more common in the smaller groups of cells where the nuclei have a more distinctly longitudinal arrangement, corresponding rather to cicatricial tissue. In some of the sections, notably in those first examined, the cell groups are frequently arranged around spaces and fissures in the skin, evidently corresponding to lymphatics. Where this is the

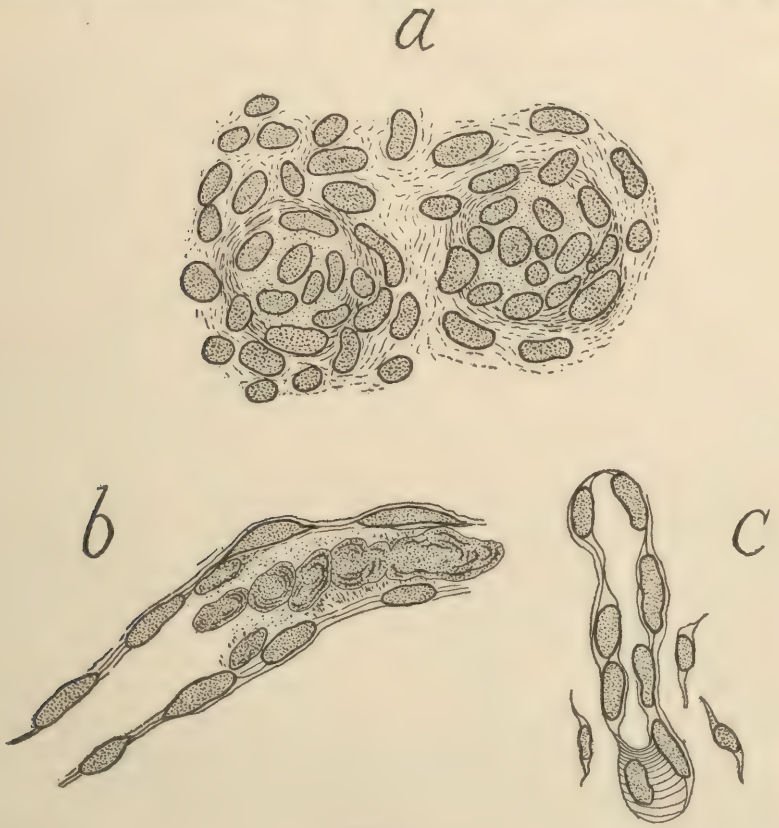

FIG. 3.

"ANGIOMA SERPIGINOSUM." (a) FROM MARGIN OF ONE OF THE LARGE CELL GROUPS, SHOWING ARRANGEMENT OF CELLS IN CONCENTRIC CLUMPS. (b) VESSEL FROM MARGIN SHOWING MASS OF DEGENERATED CELLS. (c) VESSEL IN VICINITY OF CELL GROUP, SHOWING PROLIFERATION OF ENDOTHELIUM.

case, the nuclei of the space appear to be swollen and slightly increased in number. Here and there in the surrounding tissue blood-vessels, usually small veins and capillaries, show a considerable degree of dilatation. These dilated vessels generally show no other pathological condition. The bundles of non-striated muscular fibre are prominent and possibly some-

what increased in thickness. No connection of the process with the cutaneous nerves could be made out. Staining with the appropriate reagents revealed a considerable number of plasma cells within the affected area. It could not be seen that they were more numerous in and about the cell groups than in the tissue of the corium generally, although they were certainly more numerous in the area occupied by the lesion than in the adjacent normal tissue.

When we regard the process as a whole, it would seem evident that it is one intimately connected with the vessels of the skin, affecting certain groups of vessels. This is shown both by the arrangement of the cells in the groups, and by the general course and position of the groups. The groups frequently appear in the neighborhood of dilated lymphatics, but the process is one affecting the blood-vessels rather than the lymphatics. It would seem to begin by a proliferation of the endothelium of the vessels accompanied by a corresponding proliferation of the perithelium. The single small masses of cells in the groups with concentric arrangement of the cells around them admit of no other interpretation. The central clumps of cells show every phase of degeneration and the granular masses are evidently to be referred to necrosis and coalescence of these cells. The fact that this degeneration is chiefly seen when the cells are few in number and when the process is evidently of older date seems to show that with the advance of the cell proliferation in the vessels there are at the same time degenerative processes going on, leading to the destruction of the vessels and the cessation of the circulation. No complete new formation of blood-vessels is apparent. Where the cells are thickest the process shows a certain degree of activity, which can be judged by the presence of nuclear figures. From a purely histological consideration of the growth it may be compared to an angio-sarcoma, it being understood that with this name only the histological appearance is taken into consideration. The cause is possibly to be referred to that underlying tumor formation in general, it being due to some anomalous congenital condition of the vessels. There is nothing in the histological characters which would lead us to regard it as in any way analogous to the infectious tumors.

In conclusion, we wish briefly to call attention to the histological appearances found in congenital as well as in acquired pigment spots of the skin by Demiéville (Virchow's Archiv.,

1880), and since confirmed by other observers. "Nests and strands" of cells are found in the corium, produced by cellular infiltration of the adventitia of the blood-vessels, and the vessels exhibit also a constant proliferation of their endothelial cells. Ziegler refers to these nests and strands of epithelioid cells as occurring in a variety of cutaneous formations, which are mostly congenital or developed in the earliest years. To these formations he gives the name cellular nævi. While the lesions that we have been describing present peculiarities not seen in those hitherto reported, the points of resemblance are sufficiently striking to warrant the conclusion that in certain respects this case offers an analogy histologically with the congenital and acquired pigment spots, as first studied by Demiéville."

A comparison of these two reports, made independently after prolonged and most careful study by such eminent experts in France and America, is of great interest. They differ in no essential respects so far as relates to the actual changes in the cutaneous tissues, although they do not entirely agree in their interpretation of the same. They coincide in recognizing that the growth is made up in the main of masses of endothelial cells. Darier emphasizes the constructive nature of the process in pointing out the agency these cells take in the formation of new blood-vessels, whereas Councilman and Bowen call attention to the degenerative character of the process going on in the vessels, and recognize only a proliferation of the perithelial and endothelial cells of the vessels. The latter state that the growth may be compared histologically to an angio sarcoma, whereas Darier calls it unreservedly a sarcomatous neoformation, an angioplastic sarcoma.

Other and better known types of sarcoma associated with telangiectasis, such as the case reported to this Association by Dr. Hardaway in 1882, have been observed to undergo involution in their central areas, and to progress in an annular form—and this is true also of some pigmented varieties. In our case no extravasated or modified blood pigment was observed, although no examination of the older and stained central portions was made.

Accepting, then, the relation of the case to sarcoma as established by the investigations of these accomplished pathologists, whether it be that of a close resemblance only on the one hand, or of absolute identity on the other, it is evident

that the prognosis must be unfavorable, and that the probable development of some eventual malignant transformation in the nature of the process should not be disregarded.

It is to be hoped that this thorough study of the anatomy of our American case of this rare disease may lead to a similar investigation of the English and German cases, as reported by Hutchinson and Crocker, so that we may know if all five of them, which bear so close a resemblance to each other in their clinical features are really identical. In the meanwhile the title suggested by Darier is certainly more appropriate to the case I have presented to you.

In conclusion I desire to record my sincere thanks to the distinguished pathologists who have given me such important assistance, and who have contributed to this report its chief value in discovering the true nature of so rare an affection.